

SPACE TRANSPORTATION SOLUTIONS AND INNOVATIONS SYMPOSIUM (D2)  
Future Space Transportation Systems (4)

Author: Dr. Yu Yubin  
China Academy of Launch Vehicle Technology (CALT), China, yuybzt@gmail.com

Dr. Ma Baohai  
China, yuybzt@gmail.com  
Mrs. Zhang Rui  
China, zhangruiyb@126.com

RESEARCH ON EXPERIMENTAL VERIFICATION LAUNCH VEHICLE OF ADVANCED  
REUSABLE HYPERSONIC AEROSPACE VEHICLE ADVANCED TECHNOLOGY**Abstract**

In Advanced Reusable Hypersonic Aerospace Vehicle development, Faced with many of the key technologies have not met, for example, the advanced thermal protection materials technology, hypersonic flight control technology, advanced measurement techniques. But in the process of key technologies research, ground experiments can't simulate true flight environment, the real response can't be achieved, cause great difficulties to key technological breakthroughs . To achieve the real response is important, and, Experimental verification of the true state is necessary. In this paper a relatively mature and common Launch Vehicle is used to give the true flight environment, able to cover the requirements of Advanced Reusable Hypersonic Aerospace Vehicle key technologies research by the flight altitude, flight speed, flight time. However, due to flight changes in the environment, launch vehicle design, there are some technical difficulties for launch vehicle design, such as heat-resistant, trajectory design, separate technique at large dynamic pressure. In this paper, gives solutions of these technical difficulties.